For 1920 the first A-number of *Matematisk Tidsskrift*, the organ of the Mathematical Society of Copenhagen, contains a six-page sketch by C. Juel of Hieronymus Georg Zeuthen (1839–1920) and an interesting portrait of him taken in 1880; in the first B-number is an article by T. Bonnesen on ancient and modern theories of irrationality.

Bulletin de la Société Mathématique de Grèce I, 1—Δελτίον τῆς Ἑλληνικῆς Μαθηματικῆς Ἑταιρείας, Τόμος Α΄, Τεῦχος Α΄, was published at Athens (Π. Α. Πετράκου) in May, 1919. The second number published in December completed the volume of 186 pages, rather more than a third of which is in French, the rest being in Greek. The four parts of each number are devoted to (*a*) the proceedings of the Society; (*b*) mathematical papers of a purely scientific nature; (*c*) papers in their essence philosophic, didactic, etc.; (*d*) miscellaneous mathematical news. The editors are G. Rémoundos, P. Zervos, N. Sakellarios and K. Lambiris. The scientific papers in the first number are entitled: "Formules fondamentales relatives aux courbes d'un couple de surfaces," "Les séries divergentes par le calcul des probabilités," "Sur l'équivalence des systèmes d'équations différentielles," "Sur quelques rémarques relatives aux théories de l'intégration des systèmes en involution du second ordre," "Sur les formes bilinéaires," and "Περὶ μηχανικῶν ἀναλλοιώτων."

A sumptuous volume by Mr. JAY HAMBIDGE entitled *Dynamic Symmetry, the Greek Vase*, was published last May by the Yale University Press (178 linecuts; 161 pages, small folio; price $6.00). "Dynamic symmetry deals with commensurable areas which represent the projection of solids. The symmetry of man and plant is dynamic; the symmetry of the entire fabric of classic art, including buildings, statuary and the products of all of the crafts, is dynamic. The symmetry of art since classic times is *static*.

"So revolutionary are the discoveries made by Mr. Hambidge, so tremendous will be their effect on the fundamental rules of artistic expression, that the world of art is roused to a high pitch of interest. The principles of 'dynamic symmetry',[1] have now been adopted by many craftsmen, designers and a number of important advertising illustrators." These principles are based upon golden section and the logarithmic spiral form. Professor R. C. ARCHIBALD contributes "Notes on the logarithmic spiral, golden section and the Fibonacci series," pages 146–157,—an extensive elaboration of his notes which appeared in this MONTHLY *1918*, 189–193, 232–238.

ARTICLES IN CURRENT PERIODICALS.

AMERICAN JOURNAL OF MATHEMATICS, volume 42, no. 1, January, 1920 [published March, 1920]: "Groups of order $2^{m'}$ which contain a relatively large number of operators of order 2" by G. A. Miller, 1–10; "The Green's function for a plane contour" by H. D. Frary, 11–25; "On the solution of certain types of linear differential equations in infinitely many variables" by W. G. Simon, 27–46; "Periodic orbits on a surface of revolution" by D. Buchanan, 47–75.

[1] These principles are also developed in a monthly periodical called *The Diagonal* (Yale University Press) of which Mr. Hambidge is editor.

BROWN ALUMNI MONTHLY, Brown University, volume 20, May, 1920: "Henry Parker Manning and the development of mathematics at Brown" by R. C. Archibald, 183–185.

BULLETIN DES SCIENCES MATHÉMATIQUES, volume 44, January, 1920: Review by E. Picard of "Mémoire sur certains nombres invariants qui se présentent dans la théorie des multiplicités algébriques" by S. Lefschetz, 5–7 [From *Comptes Rendus*, volume 169, see *1920*, 143]; Review by P. Drouin of P. Boutroux's *Les Principes de l'analyse mathématique*, tome 2 (Paris, 1919), 16–20.

BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY, volume 26, no. 6, March, 1920: "The twenty-sixth annual meeting of the American Mathematical Society" by F. N. Cole, 241–259; "The St. Louis meeting of the American Mathematical Society" by O. D. Kellogg and A. Dresden, 260–273; "Poncelet polygons in higher space" by A. A. Bennett, 274–275; "On the rectifiability of a twisted cubic" by Mary F. Curtis, 275–277; "Note on linear differential equations of the fourth order whose solutions satisfy a homogeneous quadratic identity" by C. N. Reynolds, Jr., 277–280; "An acknowledgment of priority" by A. A. Bennett, 280–281; "Dickson's *History of the Theory of Numbers*" by D. N. Lehmer, 281; "Notes," 281–285; "New publications," 285–288.

BULLETIN OF THE CALCUTTA MATHEMATICAL SOCIETY, volume 10, no. 3, December, 1919: "On a special square matrix of order six" by C. E. Cullis, 127–140; "On the formation of optical images by a diffracting boundary" by B. C. Das, 141–150; "On Joachimsthal's attraction problem" by S. C. Dhar, 151–156; "On the potentials of heterogeneous incomplete ellipsoids and elliptic discs" by N. Sen, 157–178; "On the wave-equation in ellipsoidal coördinates" by S. Banerji, 179–186; "On the numerical calculation of the roots of the equations $P_n^m(\mu) = 0$ and $\frac{dP_n^m(\mu)}{d\mu} = 0$ regarded as equations in n," Part 2, by B. Pal, 187–194.

HIBBERT JOURNAL, London, volume 18, no. 3, April, 1920: "Euclid, Newton, and Einstein" by C. D. Broad, 425–458 [Last paragraph: "I have now fulfilled my promise to the best of my ability. We have seen what exactly Einstein's theory is and how it is related to Euclidean geometry and to Newtonian mechanics. The connection with the former is not really very intimate, and Einstein himself makes very little play with it. The connection with the latter is all-important. Einstein's discovery synthesizes Newton's two great principles—the laws of motion and the law of gravitation. It removes the obscurity that has always hung over the former, by working out the relativity of motion to the bitter end, whilst it generalizes and slightly corrects the latter and accounts for its peculiar position among all the other laws of nature. Such work can only be done by a man of the highest scientific genius, and we have no right and no need to enhance his greatness by decrying the immortal achievements of his predecessors. It is enough that we can, without the slightest flattery or hyperbole, class Einstein with Newton, and say of the former what is written on the tomb of the latter:—'Sibi gratulentur homines tale tantumque exstitisse humani generis decus.'"]

JOURNAL OF EDUCATION, Boston, volume 90, December 25, 1919: "Concrete geometry for seventh grade" by W. H. Fletcher, 654–657.

MATHEMATICAL GAZETTE, volume 10, March, 1920: The annual meeting of the Mathematical Association, 17–19; "Gleanings far and near," 19, 29, 34; "Geometry teaching: the next step" by C. Godfrey, 20–24; "Convention and duplexity in elementary mathematics" by E. H. Neville, 25–26; "The position of common logarithms in mathematical training," by H. M. Cook, 27–28 [followed by discussion, 28–29]; "The teaching of mechanics to beginners" by R. C. Fawdry, 30–34; "The graphical treatment of differential equations" (continued) by S. Brodetsky, 35–38; "Coördinate geometry in schools" by W. J. Dobbs, 39–41; "Obituary, G. W. Palmer," 42 [Mr. Palmer's death was recorded in the MONTHLY, *1920*, 43. Quotations: "We have heard it said that he well deserved to be called the 'Father of Arithmetic' in English education. . . . By the stress we have laid on his contributions to the literature of one branch of elementary mathematics, we do not wish to imply that his work was thereby limited. It may be said, indeed, that he inaugurated a new era in the teaching of mathematics at Christ's Hospital]; "Mathematical Notes" by G. H. Bryan ('A formal geometrical construction for the solution of the sound ranging problem'), A. O. P. ('A curiosity'), T. Carleman (Chances in winning a game at lawn tennis), and W. E. H. Berwick ('The four fours'), 43 [The curiosity is: $\frac{18534}{92667} \times \frac{17469}{58323} = \frac{34182}{56975}$. Here the set of digits occurs in each fraction, each digit once and only once]; Reviews and notices, books received, contents of journals, etc., index to volume 9, 44–48 + 14 pp.

MESSENGER OF MATHEMATICS, volume 49, no. 3, July, 1919: "Factorisation of N & $N' = (x^n \mp y^n) \div (x \mp y)$, &c. [when $x - y = 1$]" (continued) by A. Cunningham, 33–36; "The eliminant of two binary quantics with determinantal coefficients" by T. Muir, 37–41; "On certain plane configurations of points and lines" by W. Burnside, 41–43; "A property of groups of even order" by W. Burnside, 43; "On the solution of a cubic equation" by A. Lodge, 44–48. No. 4, August: "On the solution of a cubic equation" (continued) by A. Lodge, 48–51; "On uniform Diophantine approximation" by H. T. J. Norton, 51–57; "Standard relation of Legendre's functions" by R. Hargreaves, 58–62; "Note on the mth compound of a determinant of the $(2m)$th order" by T. Muir, 62–64.

NATURE, volume 105, March 18, 1920: "Mathematics: pure and applied" by S. Brodetsky, 64–67 [reviews of F. Slate's *The Fundamental Equations of Dynamics and its Main Co-ordinate Systems Vectorially Treated and Illustrated from Rigid Dynamics* (Berkeley, 1918), of L. Silberstein's *Projective Vector Algebra: An Algebra of Vectors Independent of the Axioms of Congruence and of Parallels* (London, 1919), of E. S. Andrews's *Elements of Graphic Dynamics* (London, 1919), of C. Davison's *Differential Calculus for Colleges and Secondary Schools* (London, 1919) and of J. Milne's *The Analytical Geometry of the Straight Line and the Circle* (London, 1919)]; "Some methods of approximate integration and of computing areas" by A. C. Percival, 70–71; "Time-reckoning of the North American Indians," 75; "The gyrostatic compass" by S. G. Brown, 77–80.—March 25: "Aeronautical research" 95–97 [Review of L. Bairstow's *Applied Aerodynamics* (London, 1920).]—April 1; "Some methods of approximate integration and of computing areas" by R. A. P. Rogers, 138 ["The formulæ which Mr. Percival gives in *Nature* for March 18 for approximate integration are well known, but there are one or two points in connection with them which are frequently overlooked, especially by writers of books on mathematics for engineers . . ."]; "Gravitational deflection of high-speed particles" by H. G. Forder, 138 ["The result mentioned by Mr. Leigh Page and verified by Prof. Eddington (*Nature*, March 11, p. 37), that the gravitational effect on a particle travelling radially is a repulsion if the speed exceeds $11\sqrt{3}$ times the light-velocity, is given by Hilbert in the *Göttinger Nachrichten* for 1917. The same paper contains interesting remarks on the path of a particle or light-pulse moving spirally round the gravitation centre."]—April 8: "Recent mathematical books" by J. M., 162–163 [review of Karpinski, Benedict, and Calhoun's *Unified Mathematics* (Boston, 1918), C. H. P. Mayo's *Elementary Calculus* (London, 1919), J. W. Angles's *Mensuration for marine and mechanical engineers* (London, 1919), W. G. Borchardt's *School Mechanics*, Part 1. *School Statics* (London, 1919).]—April 15: "Matrices" by G. B. M., 191–192 [review of C. E. Cullis's *Matrices and Determinoids* (Cambridge, 1918)]; "A dynamical specification of the motion of Mercury" by G. W. Walker, 198–199.—April 22: "Gravitational deflection of high-speed particles" by L. Page, 233.—April 29: "Critical mathematics" by G. B. M., 256–267 [review of P. Boutroux's *Les principes de l'analyse mathématique; exposé historique et critique* (Paris, 1919)]; "Artillery science" by G. Greenhill, 268–270; "Courses on the history of science," 279.—May 6: "Euclid's Elements" by G. B. M., 288–289 [review of T. L. Heath's *Euclid in Greek, Book I* (Cambridge, 1920)]; "Leonardo de Vinci" by E. McCurdy, 307–309.—June 17: Review of W. W. Smith's *A Theory of the Mechanism of Survival: The Fourth Dimension and its Applications* (London, Kegan, Paul, Trench, 1920), 484; "A new method for approximate evaluation of definite integrals between finite limits" by T. Y. Baker, 486; "S. Ramanujan, F.R.S." by G. H. Hardy, 494–495 [Quotations: "I first heard of Ramanujan in 1913. The first letter which he sent me was certainly the most remarkable that I have ever received. There was a short personal introduction written, as he told me later, by a friend. The body of the letter consisted of the enunciations of a hundred or more mathematical theorems. Some of the formulæ were familiar, and others seemed scarcely possible to believe. A few (concerning the distribution of primes) could be said to be definitely false. There were no proofs, and the explanations were often inadequate. . . . Whatever reservations had to be made, one thing was obvious, that the writer was a mathematician of the highest quality, a man of altogether exceptional originality and power. . . . Ramanujan's activities lay primarily in fields known only to a small minority even among pure mathematicians—the applications of elliptic functions to the theory of numbers, the theory of continued fractions, and perhaps above all the theory of partitions. His insight into formulæ was quite amazing, and altogether beyond anything I have met with in any European mathematician. It is perhaps useless to speculate as to his history had he been introduced to modern ideas and methods at sixteen instead of at twenty-six, It is not extravagant to suppose that he might have become the greatest mathematician of his time. What he did actually is wonderful enough. Twenty years hence, when the researches which his work has suggested have been completed, it will probably seem a good deal more wonderful than it does to-day."]

NOUVELLES ANNALES DE MATHEMATIQUES, volume 78, December, 1919: "Avis" by les rédacteurs, 441–443 [Quotations: ". . . Nous avons ainsi été conduits à concevoir une véritable réorganisation de ce journal, dans le sens que nous allons indiquer. Chaque numéro des *Nouvelles Annales* contiendra, en principe, des *Mémoires originaux*, des *Exercices de Licence et d'Agrégation*, une *Chronique du mouvement mathématique*, des *Enonces et des solutions de questions* . . . Dans la *chronique* . . . nous publierons des nouvelles intéressant le monde des mathématiciens, telles que nominations, distinctions, ouvertures de cours importants, des résumés plus ou moins détaillés de découvertes récentes (sans qu'il s'agisse d'un dépouillement systématique des périodiques, travail pour lequel il exist des publications auquelles les *Nouvelles Annales* ne prétendent pas se substituer); des analyses bibliographiques, etc."]; "Sur les équations de Didon" by P. Humbert, 443–451; "Sur le cercle de Miquel" by F. Girault, 452–456; "Sur les surfaces tétraédrales symétriques" by C. Servais, 456–468; Questions and solutions, 468–472; Index, 473–480.—Volume 79, January, 1920: "Exposé élémentaire d'une théorie rigoureuse des liaisons finies unilatérales" by E. Delassus, 1–12; "Simple remarque sur la cyclide de Dupin" by M. d'Ocagne, 13–14; "Lieux des foyers ordinaires des courbes algébriques d'un faisceau tangentiel ou ponctuel" by T. Lemoyne, 14–17; Licence questions 17–30; Chronique, 31–35; Questions and solutions, 35–40.

PEDAGOGICAL SEMINARY, volume 26, no. 4, December, 1919: "Relation of initial ability to the extent of improvement in certain mathematical traits" by F. M. Phillips, 330–355.

PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY OF LONDON, series A, vol. 220, no. A579, April 27, 1920: "A determination of the deflection of light by the sun's gravitational field, from observations made at the total eclipse of May 29, 1919" by F. W. Dyson, A. S. Eddington, and C. Davidson, 291–333 + plate 1.

PROCEEDINGS OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES, volume 55, no. 3, March, 1920: "Contribution to the general kinetics of material transformations" by A. J. Lotka, 135–154.—No. 4, March: Rotations in space of even dimensions" by H. B. Phillips and C. L. E. Moore, 155–188.

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, volume 6, no. 2, February, 1920: "Groups generated by two operators, S_1, S_2, which satisfy the conditions $S_1^m = S_2^n$, $(S_1S_2) = 1$, $S_1S_2 = S_2S_1$" by G. A. Miller, 70–73; "The larger opportunities for research on the relations of solar and terrestrial radiation" by C. G. Abbott.—March: "Note on geometrical products" by C. L. E. Moore and H. B. Phillips, 155–158.

PROCEEDINGS OF THE ROYAL SOCIETY, volume 97, no. A683, April 15, 1920: "A new apparatus for drawing conic curves" by A. F. Dufton, 199–201 [Quotations: "1. The attention of mathematicians has been attracted to the mechanical description of conic sections since the discovery of the curves by Menaechmus, but in the numerous mechanisms which have been invented only partial success has been attained.

"In an early conograph, the invention of which is ascribed to the Arabs, the curve is the actual intersection of the surface upon which it is drawn with a straight line generating a cone. Instruments of this kind were designed at the end of the sixteenth century for use in the construction of sun dials.

"Newton in his 'Principia' (Lib. I, Prob. XIV) discusses the drawing of conic sections and describes a mechanical method of plotting them. Two angles are rotated about their vertices and the intersection of one pair of arms is kept upon a fixed straight line. The locus of intersection of the other pair is a conic section.

"Sylvester (*Proc. Roy. Inst.*, vol. 7, p. 179 (1873–75)) showed that a conic can be drawn by means of an apparatus of thirteen links. His method fails to draw the curve at the vertex but is simpler than that of Peaucellier (ibid.), which involves the use of fifteen links besides a crosspiece rigidly attached to one of them. Both these methods depend upon the principle of inversion.

"A conograph based upon the constancy of the anharmonic ratio subtended at the tracing point by four fixed points on the curve was invented by Willy Jürges (*Zeitschrift für Math. und Physik*, vol. 38, p. 350 (1893)). In this instrument the use of eight sliding constraints makes smooth work difficult.

"2. With the apparatus described in this paper, the conic is drawn as the polar reciprocal of a circle. . . . In the remarkable precision of even a roughly made instrument, in the tracing of the curve at one sweep and in the application to all conics from circle to straight line, the apparatus offer a satisfactory solution to a very ancient problem".

QUEEN'S QUARTERLY, Queen's University, volume 27, no. 3, January, 1920: "Relativity and gravitation," part 1, by E. Flammer, 286–308.—April: "Relativity and gravitation," part 2, by E. Flammer, 424–442.

SCHOOL SCIENCE AND MATHEMATICS, volume 20, no. 3, March, 1920: "Some problems for the class room from the orientation work of the A. E. F." by C. A. Epperson, 210–213; "Problem department," 270–272.—No. 4, April, 1920: "Some factors affecting the selection of the high-school course of study and methods of teaching mathematics" by H. R. Douglas, 287–299; "Second list of marginal notes on Cajori's history of mathematics" by G. A. Miller, 300–304; "Up-to-date problems in junior high school mathematics" by T. Lindquist, 305–311; Problems and solutions, 365–368, 374; "Meeting of Association of Teachers of Secondary Mathematics in North Carolina," 378; "The National Council of Mathematics Teachers," 380–382.

SCIENCE, n.s., volume 51, April 2, 1920: "Notice of a recent contribution to statistical methods" by G. F. McEwen and E. L. Michael, 349–350 [Compare this MONTHLY, *1920*, 133].—April 9: "Concerning ballistics" by A. G. Webster, 368–369.—April 30: "Unification of symbols and diagrams" by W. P. White, 436–437 [First paragraph: "The recent attempts to unify the mathematical symbols used in physics and chemistry are probably approved, in principle, by practically everyone. They have stimulated and guided a large amount of voluntary effort and coöperation. Their complete recognition and adoption has been hindered by the difficulty of getting any one system to satisfy the varied requirements and personal preferences involved."] —May 7: "Modern interpretations of differentials" by A. S. Hathaway, 464–465 ["To the Editor of *Science:* Professor E. V. Huntington, in an article entitled 'Modern interpretation of differentials' (*Science*, March 26), states with reference to the $\lim \Delta y = 0$, $\lim N\Delta y = dy$, that, 'The inevitable consequence of such a definition is that $dy = 0$, which is futile.' Every school boy in the theory of limits knows that this is not true when N varies . . ."]; Review by R. von Huhn of A. C. Haskell's *How to make and use graphic charts* (New York, 1919), 466–467 [Cf. *1920*, 269–270].—May 21: "Formulæ giving the day of the week of any date" by W. J. Spillman, 513–514; "A new statistical journal" by R. Pearl, 515–517 [*Metron*, Tipografia Industrie grafiche Italiane, via Viscovado, Padova, Italy; quarterly, 40 lire a year]; "The American Mathematical Society", by F. N. Cole, 523–524.—May 28: "The Mathematical Institute at the University of Strasbourg," 534.—June 11: "Modern interpretation of differentials again" by E. V. Huntington, 593.—June 18: "Aristotle and Galileo on falling bodies" by F. Cajori, 615–618.—Volume 52, July 9: "Modern interpretation of differentials" by A. S. Hathaway, 35.

TEXAS MATHEMATICS TEACHERS' BULLETIN, volume 5, no. 1, November, 1919: "Freshmen mathematics prizes" by H. J. Ettlinger, 5–6; "Mathematics Section, State Teachers Association" by Goldie P. Horton, 7–8; "The Pythagorean Theorem" by P. M. Batchelder, 9–13; "The quadratic equation and its solution" by J. W. Calhoun, 14–18; "On the disciplinary and applied values of mathematical study" by C. N. Moore, 19–26 [Reprinted from *Education*, December, 1918; cf. *1919*, 162]; "Practical figures in solid geometry" by Elizabeth Dice, 27–29; "Some problems in applied plane geometry" by H. J. Ettlinger, 30–32; "Topics and references for the high school mathematics club" by Goldie P. Horton, 33–34; "The straight edge" by A. N. Onymous, 35—No. 2, February, 1920: "Mathematics in the summer school" by H. J. Ettlinger, 5; "A report on the teaching of high school mathematics" by H. J. Ettlinger, 6–7; "Asking questions" by T. McN. Simpson, 8–11; "Limit proofs in geometry" by A. A. Bennett, 12–21; "What is mathematics?" by P. M. Batchelder, 22–24; "Sundials" by Mary E. Decherd, 25–30; "Mathematics at the Houston meeting of the State Teachers Association" by Goldie P. Horton, 31–32; "The straight edge."

TRANSACTIONS OF THE AMERICAN MATHEMATICAL SOCIETY, volume 21, no. 2, April 1920: "Differential equations containing arbitrary functions" by G. A. Bliss, 79–92; "Functions of lines in ballistics" by G. A. Bliss, 93–106; "On the summability of the developments in Bessel's functions" by C. N. Moore, 107–156; "One parameter families and nets of ruled surfaces and a new theory of congruences" by E. J. Wilczynski, 167–206; "Note on space curves" by G. M. Green, 207–236 ["The manuscript of this paper was found among the papers in the late Dr. Green's handwriting which were turned over to me for investigation. It was complete except for a few references, which I have supplied; the only changes which I have permitted myself to make are concerned with two or three places where the language seemed to be ambiguous. This paper constitutes a notable addition to Green's writings, and shows once more the fertility of his imagination and his unfailing ability to see something new even in the most familiar fields.—E. J. Wilczynski"]; "A set of postulates for fields" by N. Wiener, 237–246; "A theorem on modular covariants" by Olive C. Hazlett, 247–254.

UNIVERSITY OF CALIFORNIA PUBLICATIONS IN MATHEMATICS, volume 1, no. 12, April 12, 1920: "A set of five postulates for Boolean algebras in terms of the operation 'exception'" by J. S. Taylor, 241–248.

ZEITSCHRIFT FÜR MATHEMATISCHEN UND NATURWISSENSCHAFTLICHEN UNTERRICHT, volume 50, nos. 11–12, published January 10, 1920: "Zur elementaren Behandlung von Exponentialfunktion und Logarithmus" by A. Loewy, 330–339; "Bücherbesprechungen," 340–347—Volume 51, no. 1, published February 5: "Die Simsonsche Gerade" by R. Henke, 1–12; Lektorate für Mathematik, ein Vorschlag zur Erweiterung des mathematischen Hochschulunterrichts" by A. Rohrberg, 13–17; "Kleine Mitteilungen," 18–24.

AMERICAN DOCTORAL DISSERTATIONS.

S. P. SHUGERT, The resolvents of König and other types of symmetric functions. Lancaster, Pa., 1919. 19 pp. (University of Pennsylvania, 1914.)

UNDERGRADUATE MATHEMATICS CLUBS.

EDITED BY U. G. MITCHELL, University of Kansas, Lawrence.

NOTES AND SUGGESTIONS.

If our readers know of the formation or existence of undergraduate mathematics clubs which have not been mentioned in this department we would be glad to have them send us full information concerning their organization and activities. We hope, too, that clubs which plan their programs for the year soon after the opening of college will send us copies without waiting for a request from the editor. The issuing of a printed folder in October or November giving information about the club as well as times, places and programs for meetings during the year seems to contribute decidedly to the success of the work and the number of clubs which are adopting the plan is increasing. A sample of such a folder will be sent by the editor of the department to any one requesting it.

Appendix A, pages 227–230 of Marie Gugle's *Modern Junior Mathematics*, Book 2 (New York, The Gregg Publishing Co., 1920), is devoted to "Mathematics Clubs." Sample programs are given to show how the same topic may be used in various grades by making the treatment different in each case. A list of thirty-four topics and twelve titles of books and magazines are given. While these programs, topics and references are intended for high schools they may prove suggestive to club program makers in colleges.

In response to our request published sometime ago for suggestions which might be used in social meetings, Mr. John W. Arnold, Treasurer of the Undergraduate Mathematics Club at the University of Illinois, sends the following account of the annual social meeting of their club held Friday evening, March 12, 1920.

The company of about eighty persons was numbered and tagged upon arrival and later divided by means of the last digit of the number into five groups—followers of Newton, Descartes, Euclid, Leibniz, and Pythagoras—who arranged